

STATEMENT OF WORK

Technical Support for Assessing and Managing the Ecological and Human Health Risks of Toxic Bioaccumulative Contaminants in Water, Fish and Sediments and Microbial Pathogens in Surface Waters

RFP: PR-CI-03-10336

1. Background

1.1. The Standards and Health Protection Division (SHPD), under the Office of Science and Technology (OST) within EPA's Office of Water (OW) has multiple responsibilities under the Clean Water Act of 1987 (CWA) to include directing the national program for adoption of Water Quality Standards, developing prevention and remediation strategies to reduce the risk to human health and aquatic life resulting from contaminated fish and sediment, and microbial pathogens in surface waters, providing technical support to the Total Maximum Daily Load (TMDL) program (section 303(d)), and preparing outreach and awareness materials including developing instructional material and presenting workshops.

1.2. Toxic bioaccumulative contaminants in surface waters, sediments, and fish tissue pose threats to ecological and human health. Microbial pathogens in surface waters also pose threats to human health through bathing beach exposure. The Health Protection and Modeling Branch (HPMB) is developing methods and guidance for EPA program offices, State agencies, local governments, and nongovernmental organizations to assess, remediate, or otherwise manage, and communicate the risks associated with exposure to these contaminants and microbial pathogens. HPMB is also conducting work to assess sediment and fish tissue contamination, as well as water-borne pathogens present at bathing beaches. Contractor support is required for these activities.

2. Purpose

The purpose of this contract is to provide technical support to the Agency in addressing the following task areas:

- a) Risk-based analyses;
- b) Economic and statistical analyses;
- c) Model application;
- d) Guidance and report development;
- e) Compilation and analysis of national and international environmental data;
- f) Methods development and validation;
- g) Environmental assessments;
- h) Field sampling;
- i) Workshops, conferences, training, and logistical support;
- j) Expert/peer review support;
- k) Public outreach and technology transfer;

- l) Compilation, categorization, and summarization of comments;
- m) Preparation of presentation materials;

3. Scope of Work

The contractor shall supply all necessary labor, material, services, equipment and facilities in support of EPA as delineated below and as further directed by specific work assignments.

3.1. Risk-Based Analyses

The contractor shall provide professional support in performing risk-based analyses to assess the human health and/or ecological risks associated with exposure to toxic bioaccumulative contaminants in water, sediment, fish tissue, and microbial pathogens in water. Such analyses may address comparative risks of exposure to contaminants from a range of sources, as well as the health benefits of consuming fish. Analyses may also address the human health risks of exposure to microbial pathogens. The contractor shall compile and analyze data, prepare reports, prepare literature searches and reviews, prepare synopses of risk assessment and management issues, and develop risk-based tissue residue threshold models for bioaccumulation in marine and freshwater species.

3.2. Economic and Statistical Analyses

The contractor shall produce data required (and economic assessments of cost to be incurred by the regulated community, and local, state, and Federal governments) for alternative regulatory and policy options. The contractor shall also provide data required for EPA's assessment of the benefits of the regulation or policy to society. Analyses may include environmental benefits, health benefits, recreational benefits, and other ecological benefits. Other analyses conducted may include cost analysis, cost-effectiveness analysis, and cost-benefit analysis. Where feasible, the contractor shall quantify and monetize the benefits. The data shall be provided in either raw or aggregate form and transmitted in either printout, computer disk, or report format. The contractor shall also conduct other statistical analyses to help assess the impact of management options and guidance (as it relates to human health risks from bioaccumulative contaminants and microbial pathogens). These analyses may include preparing and analyzing large sets of environmental and socioeconomic data using a variety of statistical procedures.

3.3. Model Applications

The contractor shall enhance, validate and apply models, as necessary, to address specific problem areas, such as fate and transport of water column and sediment contaminants, and pathogens. Model application may be focused on simple screening-level models or complex intermedia models that may operate at the level of watersheds or air sheds. It is anticipated that these models will have the capacity to deal with multiple sources of toxic or conventional pollutants and microbial pathogens, particularly toxic contaminants that accumulate in sediments and fish. Depending upon the situation, analyses at variable levels of complexity will be necessary. The contractor shall be able to provide descriptions of models, discuss their attributes and limitations, data requirements, availability of required input data, and shall provide sufficient information on models to

enable EPA to determine their appropriate use in given situations. The contractor shall be prepared to provide a detailed description of the methodology, assumptions and rationale used in its conclusions. In all cases, the EPA will be the decision-maker.

3.4. Guidance and Report Development

The contractor shall provide technical support in the development of EPA technical guidance documents and reports. Documents and reports shall be prepared in support of the Agency's regulatory and non-regulatory requirements for assessing and communicating the human health and ecological risks associated with microbial pathogens in water and with toxic bioaccumulative contaminants in water, sediment, and fish tissue. Guidance documents and reports will focus on such issues as:

- a) Assessment, prevention, and remediation of contaminated sediment;
- b) Testing and analysis of sediment, water, and fish tissue;
- c) Interpretation of bioaccumulation data for the purposes of human health and ecological risk assessment, and water quality standards development;
- d) Development of point and nonpoint source controls to prevent sediment and fish tissue contamination, and bacterial contamination;
- e) Development of fish consumption advisories for the protection of human health;
- f) Designing and implementing sediment, water, and fish tissue monitoring programs, including monitoring of pathogens and pathogen indicators;
- g) Assessment and management of the human health risks caused by exposure to microbial pathogens at bathing beaches, and in associated waters, organisms, and sediments.
- h) Risk communication

3.5. Compilation and Analysis of National and International Environmental Data

The contractor shall provide technical support for maintaining and updating the Office of Water's and SHPD's national and international environmental databases. Technical support shall also be provided for completing data analyses and reports for national studies, such as EPA's national study of chemical residues in fish tissue, EPA's biennial survey of sediment quality in the United States, and EPA's "Annual National Health Protection Survey of Beaches". Technical support shall be provided for updating and maintaining EPA's national and international listing of fish consumption advisories, EPA's National Sediment Inventory, EPA's national fish tissue database, EPA's national beach monitoring and notification database, and water quality standards databases. Work to be completed by the contractor may include:

3.5.1. The collection of water quality, fish advisory program and recreational water advisory program information from the States, local and regional governments, and from other countries or from other sources identified by the EPA work assignment manager through approved surveys and other means as directed by specific work assignments. The contractor shall update and improve EPA's databases of fish consumption advisories and recreational water information.

3.5.2. Collection of water quality, sediment quality, and tissue data from Federal and nonfederal sources and compilation of these data in national repositories for storage, analysis, and dissemination (e.g., STORET, and/or other repositories where necessary and appropriate).

3.5.3. Investigation of the use of existing OW databases, i.e., STORET, and where necessary or appropriate design and maintenance of systems for storage, analysis, and dissemination of microbiological water quality data collected at bathing beaches, and other information collected through approved surveys and other means.

3.6. Methods Applications

The contractor shall provide technical support for developing and evaluating standard bioaccumulation and sediment toxicity, and microbiological assessment methods for marine and freshwater environments and a tiered testing framework for interpretation of results. Work to be completed by the contractor may include:

- a) completion of laboratory experiments and analyses to develop and evaluate test protocols,
- b) field and laboratory work to evaluate and validate test methods,
- c) conducting comparative test sensitivity analyses,
- d) developing models and guidance for interpretation of test results,
- e) conducting interlaboratory comparison studies, and developing standard method protocol documents.

All field monitoring, calculations, laboratory records, diaries, data processing information, sampling procedures, sample preparation and preservation methods, sample tracking procedures, and field sampling QA/QC efforts assigned by EPA shall comply with all EPA requirements and shall be reported to EPA in the formats specified by the work assignments.

3.7. Environmental Assessments

The contractor shall provide technical support in conducting environmental assessments in support of efforts to prevent and remediate toxic contaminants in water, sediment, and fish tissue, and also to assess microbial pathogens in water. These assessments may take many forms, including:

- a). conducting national inventories of point and nonpoint sources of contaminants,
- b). estimating environmental concentrations of pollutants released from point and nonpoint sources,
- c). compiling and analyzing point and nonpoint source contaminant discharge information,
- d). and conducting analyses such as use attainability analyses and development of site-specific criteria in support of water quality standards.

Environmental assessments may include:

- e). pollutant-specific evaluation of: environmental fate and effects, human and animal health effects and toxicology,
- f). and effects of evaluated point and nonpoint source discharges on receiving

waters.

g). modeling analyses addressing multimedia analyses of the fate and effects of multiple pollutants.

3.8. Field Sampling and Laboratory Analysis

The contractor shall provide technical support for performing field sampling for benthic organisms, sediments, fish, indicators of microbial pathogens, and water quality, and for field sampling for toxic pollutants to support site-specific criteria development and other water quality standards modifications. Expertise in sampling freshwater fish is essential to support SHPD field sampling requirements. The contractor shall also provide support for performing laboratory analyses, including analytical chemistry and biological testing. Field sampling and analysis shall be performed in accordance with the requirements outlined in: "Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories, Volume 1: Fish Sampling and Analysis", EPA 823-B-00-007; "QA/QC Guidance for Sampling and Analysis of Sediments, Water, and Tissues for Dredged Material Evaluations". EPA 823-B-95-001. Both of these publications may be found at www.epa.gov select Information Sources, Publications, NEPIS, search, Publication Number/Title Search, 800 Series - then selection appropriate publication number.

3.9. Workshops, Conferences, Training, and Logistical Support

The contractor shall support the EPA in providing training sessions, interactive workshops, technical assistance workshops, public fora, facilitated negotiations, and conferences to support the mission of this contract. Support shall include: arranging for meeting space and audio-visual equipment; clerical preparation of EPA-developed workshop or meeting agendas, and providing advance information to attendees; registration support; preparation of visual aids; preparation of case studies and interactive activities; identification, confirmation, and provision of logistical support for speakers and scientific or technical experts who directly contribute to the requirements of specific contract performance; evaluation of results and preparation of minutes, summary reports, and proceedings document. With prior EPA approval of all materials, the contractor shall prepare and/or assemble appropriate instructional or informational materials and make them available to attendees.

3.10. Expert/Peer Review Support

The contractor shall provide peer review of documents or products developed by EPA. The contractor is precluded from peer review of documents or products which they developed or assisted in developing. The number of reviewers required and their qualifications will be specified in Work Assignments. These qualifications may be expected to vary with the technical nature of the product. It is the responsibility of the contractor to insure that all peer reviews are conducted in a manner to avoid all actual, potential, or apparent conflicts of interest. It is also the responsibility of the contractor to submit Conflict of Interest certifications consistent with contract requirements.

The contractor shall submit peer review written comments, with all supporting materials, such as additional references or suggested approaches, to the EPA Project Officer for EPA preparation of final review and recommendations to EPA authors. Review packages

submitted by the contractor to EPA shall include: written general comments and specific changes or revisions required to improve clarity and scientific accuracy of documents or products; any new data that might contribute to the derivation of improved processes and procedures, and other scientific and technical materials that may be pertinent. The contractor shall also be available to clarify any peer reviewer comments and recommendations and to summarize EPA responses to peer review comments. Contractors shall follow EPA's Science Policy Council Handbook on Peer Review, EPA 100-B-00001, Dec 2000, 2nd Edition. This publication may be found at www.epa.gov. Select Information Sources, Publications, NEPIS, search, Publication number/Title, "comprehensive lists".

3.11. Public Outreach and Technology Transfer

The contractor shall assist the EPA in developing public education, outreach, and technology transfer documents and information materials, including EPA's "Contaminated Sediment Newsletter". Such materials shall be submitted to the EPA in draft for EPA review, recommendations and approval prior to final preparation. Such materials shall be related to the scope of work of this contract and developed for a public audience or specific stakeholders. As specified in individual work assignments, materials may be developed in both printed format (e.g., documents, posters, pamphlets, newsletters) and electronically readable format (e.g., CDS, disks, Internet).

3.12. Compilation, Categorization, and Summarization of Comments

The contractor shall compile, categorize, and summarize public comments on, and EPA responses to, draft and/or proposed rules, policies and guidance developed by EPA. The contractor shall prepare a comprehensive index of comments for purposes of classification into categories. The contractor shall prepare a list with cross-references of all issues, as well as all supporting data and information. Based on its analysis of comments, the contractor shall provide information to be used by the Agency to respond to comments; to improve regulatory and policy development; and to prepare rebuttal testimony or briefs for litigation and court review. For technical issues assigned by EPA, the contractor shall, based upon a thorough knowledge and understanding of the rulemaking strategy, or guidance, prepare cogent, accurate draft technical responses to comments including all relevant citations for review and approval by EPA personnel.

3.13. Preparation of Presentation Materials

The contractor shall support the EPA in the development of briefings for agency personnel, task forces and public meetings on the results of analyses, methodologies, and assessments developed by the contractor under the contract. Support shall include the preparation of presentation materials, such as posters, overhead transparencies, slides, or briefing packages. All products or materials prepared by the contractor will be reviewed and approved by EPA. These activities shall only be performed directly in support of the requirements of this statement of work.

All manuals, technical documents, and outreach materials shall be submitted in draft to the Project Officer/Work Assignment Manager for approval prior to issuance or use. The contractor shall provide technical editing services for all documents as directed by the

EPA Project Officer/Work Assignment Manager. Training and workshop materials shall be approved by the Project Officer/Work Assignment Manager prior to use or dissemination.

3.14. Quality Assurance/Quality Control

The contract shall have an approved Quality Management Plan (QMP) that conforms with Agency Quality Assurance/Quality Control (QA/QC) procedures in the performance of activities under this contract. This QMP should include how the contractor will address secondary data (existing data). The contractor shall follow all Agency quality assurance/quality control guidelines associated with data collection and data management described in the Office of Water "Quality Management Plan" (EPA 821-X-02-001) published July 2002. EPA 821-X-02-001 may be found at www.epa.gov/, select Information Sources, "search" for the publication number.

4.0 Information Technology Requirements

The contractor shall ensure fault-free performance in the processing of date and date-related data (including, but not limited to, calculating, comparing, and sequencing) by all hardware and software products delivered under this contract, individually and in combination, upon installation. Fault-free performance includes the manipulation of this data with dates prior to, through, and beyond January 1, 2000. This manipulation shall be transparent to the user.

The Contractor shall adhere to the EPA Information Technology Roadmap in the use of software, hardware and the incorporation of Agency data standards for data collection or data system preparation.

The Contractor shall refer to the "EPA Water Program Information Systems Compendium--FY 1998, EPA 800-B-98-001", August 1998 in order to utilize existing databases, information systems, models, and websites to the maximum extent possible prior to developing these types of products under this contract. If existing products are found to be usable for fulfilling requirements for deliverables, the contractor must notify the EPA WAM who will be responsible for coordinating the use of such products. EPA 800-B-98-0001 publication may be found at www.epa.gov select Information Sources. Publications, NEPIS, search, Publication Number/Title Search, 800 Series - then selection appropriate publication number.

5.0 EPA Office of Water - Contract Activity Information Technology Requirements

All work performed under this contract shall adhere to clause EPAAR 1552.211-79 "Compliance with EPA Policies for Information Resources Management", which requires the adherence to all Agency directives for performance of any IRM related work. The following is a list of EPA websites where the guidance documents may be found:

5.1 IRM Policies, Standards, Guidance and Planning Documents

<http://www.epa.gov/irmpoli8/>]. The 2100 Series (2100-2199) of the Agency's Directive System contains the majority of the Agency's ORM policies, standards and procedures.

5.2 Data Standards and Environmental Data Registry (EDR) [<http://www.epa.gov/edr>]. Contractor shall adhere to Trading Partner Agreement (TPA) Data Exchange Templates (DETs) and data standards detailed in EPA Environmental Data Registry (EDR). This includes any development/enhancement of information resources¹, as well as any data products flowing to or from EPA information resources.

5.3 Information Technology Architecture Road Map (ITARM) [<http://basin.rtpnc.epa.gov/ntsd/ITARoadMap.nsf>]. For development/enhancement of information resources, contractor must adhere to all technical specifications listed in the ITARM.

5.4 Environmental Information Management System (EIMS) [<http://www.epa.gov/eims>]. A contractor developing or enhancing an information resource shall first conduct a thorough search of existing information resources, through means such as EIMS, to ensure development/enhancement of information resources does not duplicate existing information resources. If duplication is determined, contractor shall consult with EPA project officer to ensure that existing information resources are optimally utilized in conjunction with information resource being developed/enhanced by the contractor. For any development/enhancement of information resources, contractor shall work with EPA on inserting/updating resource description information in EIMS.

5.5 Monitoring information in STORET [<http://www.epa.gov/storet>]. Any water quality, biological, sediment, and ecological monitoring data collected as part of contract activities must be entered into STORET or made available to EPA in a STORET compatible format.

5.6 National Hydrography Dataset (NHD) Indexing [<http://www.epa.gov/waters>]. Data related to OW programs that is required to meet the EPA Latitude/Longitude Standard shall also be indexed to the NHD, using EPA OW standard formats available on the WATERS website. Exceptions include groundwater data and data that is related to points greater than two miles from the United States coastline. The WATERS website describes EPA tools and training that are available for NHD indexing.

5.7 Database Development Requirements.

The contractor's database development and analysis personnel to be utilized

¹ Information Resources for this process include systems, databases, and models/web applications that utilize information in OW systems and databases.

during the performance under this contract shall attend the "New User" and "Advanced User" Orientation Seminars for the EPA National Computer Center and for the EPA Washington Information Center (WIC). Attendance at these seminars shall be coordinated with the Project Officer designated in this contract. The training shall be completed within thirty days after the effective date of this contract, or within thirty days of an acceptable change in personnel. This requirement may be waived, in whole or in part, by the Project Officer if the Contract personnel previously received the appropriate training.

6.0 ENVIRONMENTAL JUSTICE.

Executive Order 12898 (Environmental Justice) directs federal agencies to focus on minority and low-income populations in implementing their programs, policies, and activities. Consistent with the Agency's continuing commitment to environmental justice and fair treatment of all people, the contractor shall notify the EPA project officer of minority and low-income populations, as well as populations with differential patterns of subsistence consumption of fish and wildlife, likely to be affected by a program, policy, or activity associated with work done under the contract and, when directed by EPA, shall identify any disproportionately high and adverse human health or environmental effects of the program, policy or activity of concern on these populations (to be tailored as appropriate for individual statements of work).